

Reference 5

INITIAL ASSESSMENT FORM

SITE NAME AND LOCATION

01 SITE NAME Gas storage building now location of CPP-668.			02 ADDRESS Idaho National Engineering Laboratory (INEL)		
03 CITY Scoville	04 STATE Idaho	05 ZIP CODE 83403	06 COUNTY Butte		
09 COORDINATES: NORTH 6 9 5 8 7 5		EAST 2 9 6 1 2 5		07 COUNTY CODE	08 CONG. DIST.
10 DIRECTIONS TO SITE (Starting from nearest public road) N. on Lincoln Blvd.; E. on Cleveland Ave.					

II. OWNER/OPERATOR

01 OWNER (If known) Department of Energy (DOE)		02 STREET ADDRESS 785 DOE Place			
03 CITY Idaho Falls	04 STATE Idaho	05 ZIP CODE 83402	06 TELEPHONE NUMBER (208) 526-1122		
07 OPERATOR (If known) Westinghouse Idaho Nuclear Co.		08 STREET ADDRESS P.O. Box 4000			
09 CITY Idaho Falls	10 STATE Idaho	11 ZIP CODE 83403	12 TELEPHONE NUMBER (208) 526-0998		

III. CHARACTERIZATION OF POTENTIAL HAZARD

01 ON SITE INSPECTION <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO DATE <u>7 / 10 / 86</u>		
02 SITE STATUS (Check one) <input type="checkbox"/> A. Active SWMU <input checked="" type="checkbox"/> B. Inactive <input type="checkbox"/> C. Unknown		03 YEARS RECEIVED HAZ WASTE <u>none</u> / <u> </u> Start Stop Unknown
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED See Waste Information Section		
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION See Hazardous Conditions and Incidents Section		

IV. INFORMATION AVAILABLE FROM

01 CONTACT Clifford Clark	02 OF (Agency/Org.) DOE-ID	03 TELEPHONE NUMBER (208) 526-1122			
04 PERSON RESPONSIBLE FOR ASSESSMENT D. Joan Poland	05 AGENCY WINCO	06 ORG. N&IS	07 TELEPHONE NUMBER (208) 526-3650		
08 DATE <u>10 / 7 / 86</u> Mon Day Year					

WASTE INFORMATION	
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I	ASTE STATES, QUANTITIES, AND CHARACTERISTICS

01 PHYSICAL STATES (Check all that apply) <input type="checkbox"/> A. Solid <input type="checkbox"/> E. Slurry <input type="checkbox"/> B. Powder Fines <input type="checkbox"/> F. Liquid <input type="checkbox"/> C. Sludge <input type="checkbox"/> G. Gas <input checked="" type="checkbox"/> D. Other <u>Contaminated soil</u>	02 WASTE QUANTITY AT SITE TONS _____ CUBIC YARDS <u>11</u> NO. OF DRUMS _____
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03 WASTE CHARACTERISTICS (Check all that apply)

<input type="checkbox"/> A. Toxic	<input type="checkbox"/> D. Persistent	<input type="checkbox"/> G. Flammable	<input type="checkbox"/> J. Explosive
<input type="checkbox"/> B. Corrosive	<input type="checkbox"/> E. Soluble	<input type="checkbox"/> H. Ignitable	<input type="checkbox"/> K. Reactive
<input checked="" type="checkbox"/> C. Radioactive	<input type="checkbox"/> F. Infectious	<input type="checkbox"/> I. Highly Volatile	<input type="checkbox"/> L. Incompatible
			<input type="checkbox"/> M. Not Applicable

II. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT	COMMENTS
SLU	Sludge			
OLW	Oily Waste			
SOL	Solvents			
PSD	Pesticides			
OCC	Other organic chemicals			
IOC	Inorganic chemicals			
ACD	Acids			
BAS	Bases			
MES	Heavy metals			

I	HAZARDOUS CONSTITUENTS
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[illegible]

IV	SOURCES OF INFORMATION
11:	Specific references, e.g., state titles, sample analysis reports, etc.)

Site inspections, personnel interviews, process records, laboratory records.

HAZARDOUS CONDITIONS AND INCIDENTS			
I. HAZARDOUS CONDITIONS AND INCIDENTS			
01 <u> </u> A. GROUNDWATER CONT.	02 <u> </u> OBSERVED (Date <u> </u>)	<u> </u> POTENTIAL	
03 NARRATIVE DESCRIPTION:		<u> </u> ALLEGED	
N/A			
01 <u> </u> B. SURFACE WATER CONT.	02 <u> </u> OBSERVED (Date <u> </u>)	<u> </u> POTENTIAL	
03 NARRATIVE DESCRIPTION:		<u> </u> ALLEGED	
N/A			
01 <u> </u> C. CONTAMINATION OF AIR	02 <u> </u> OBSERVED (Date <u> </u>)	<u> </u> POTENTIAL	
03 POULATION POTENTIALLY AFFECTED <u> </u>	04 NARRATIVE DESCRIPTION	<u> </u> ALLEGED	
N/A			
01 <u> </u> D. FIRE/EXPLOSIVE CONDITIONS	02 <u> </u> OBSERVED (Date <u> </u>)	<u> </u> POTENTIAL	
03 POPULATION POTENTIALLY AFFECTED <u> </u>	04 NARRATIVE DESCRIPTION	<u> </u> ALLEGED	
N/A			
01 <u> </u> E. DIRECT CONTACT	02 <u> </u> OBSERVED (Date <u> </u>)	<u> </u> POTENTIAL	
03 POPULATION POTENTIALLY AFFECTED <u> </u>	04 NARRATIVE DESCRIPTION	<u> </u> ALLEGED	
N/A			
01 <u> </u> F. CONTAMINATION OF SOIL	02 <u> </u> OBSERVED (Date <u> </u>)	<u> </u> POTENTIAL	
03 NARRATIVE DESCRIPTION:		<u> </u> ALLEGED	
N/A			
01 <u> </u> G. DRINKING WATER CONTAMINATION	02 <u> </u> OBSERVED (Date <u> </u>)	<u> </u> POTENTIAL	
03 NARRATIVE DESCRIPTION:		<u> </u> ALLEGED	
N/A			

HAZARDOUS CONDITIONS AND INCIDENTS

HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

01 J. DAMAGE TO FLORA 02 OBSERVED (Date) POTENTIAL
 04 NARRATIVE DESCRIPTION: ALLEGED

N/A

01 K. DAMAGE TO FAUNA 02 OBSERVED (Date) POTENTIAL
 04 NARRATIVE DESCRIPTION: (include name(s) of species) ALLEGED

N/A

01 L. CONTAMINATION OF FOOD CHAIN 02 OBSERVED (Date) POTENTIAL
 04 NARRATIVE DESCRIPTION: ALLEGED

N/A

01 M. UNSTABLE CONTAINMENT OF WASTES 02 OBSERVED (Date) POTENTIAL
 (SPILL RUNOFF, STANDING LIQUIDS/LEAKING DRUMS)
 03 NARRATIVE DESCRIPTION: ALLEGED

N/A

01 N. DAMAGE TO OFFSITE PROPERTY 02 OBSERVED (Date) POTENTIAL
 04 NARRATIVE DESCRIPTION: ALLEGED

N/A

01 O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs 02 OBSERVED (Date) POTENTIAL
 04 NARRATIVE DESCRIPTION: ALLEGED

N/A

01 P. ILLEGAL/UNAUTHORIZED DUMPING 02 OBSERVED (Date) POTENTIAL
 04 NARRATIVE DESCRIPTION: ALLEGED

N/A

05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL OR ALLEGED HAZARDS

None. Radionuclide contamination only.

III. COMMENTS

IV SOURCES OF INFORMATION (List specific references, e.g., state titles, sample analysis, reports)
 Site inspections, personnel interviews, and Installation Assessment Report.

PRIORITY RANKING SYSTEM

I. GENERAL FACILITY INFORMATION

FACILITY NAME: CPP Gas Storage Building

LOCATION: New location of CPP-668

POINT OF CONTACT: NAME: _____

ADDRESS: _____

PHONE: _____

REVIEWER: D. Joan Poland

DATE: 10/18/86

II. GENERAL FACILITY DESCRIPTION

GENERAL DESCRIPTION OF THE FACILITY: (For example: landfill, surface impoundment, pile, container; types of hazardous substances; location of facility; contamination route of major concern; types of information needed for rating; agency action, etc.)

Building used until mid 1970s to store radioactive
contaminated gas cylinders. Gas cylinders
were cleaned up and shipped off site.
Any contamination has been cleaned up.
No records. CPP-668 has been built on this
site

III. SCORES

SM = 0 (Sgw= 0 Ssw= 0 Sa= 0)

SFE = 0

SDC = 0

GROUND WATER ROUTE WORKSHEET

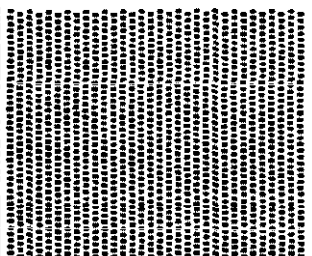
RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI- PLIER	SCORE	MAX. SCORE	REF. Section
					3.2
1. ROUTE CHARACTERISTICS					
Depth to Aquifer of Concern	0 1 2 3	2		6	
Net Precipitation	0 1 2 3	1		3	
Permeability of the Unsaturated Zone	0 1 2 3	1		3	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score			3	15	
2. CONTAINMENT	0 1 2 3	1	3	3	3.3
3. WASTE CHARACTERISTICS					
Toxicity/Persistence	0 3 6 9 12 15 18	1		18	3.4
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score			0	26	
4. Multiply lines 1 x 2 x 3			0	1170	
5. Divide line 4 by 1170 and multiply by 100 Sgw= 0					

SURFACE WATER ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI- PLIER	SCORE	MAX. SCORE	REF. Section
					4.2
1. ROUTE CHARACTERISTICS					
Facility Slope and Intervening Terrain	0 1 2 3	1		3	
1-yr. 24-hr. Rainfall	0 1 2 3	1		3	
Distance to Nearest Surface Water	0 1 2 3	2		6	
Physical State	0 1 2 3	1		3	
Total Route Characteristics Score			6	15	
2. CONTAINMENT					
	0 1 2 3	1	0	3	4.3
3. WASTE CHARACTERISTICS					
Toxicity/Persistence	0 3 6 9 12 15 18	1		18	4.4
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score			0	26	
4. Multiply lines 1 x 2 x 3			0	1170	
5. Divide line 4 by 1170 and multiply by 100 Ssw= 0					

AIR ROUTE WORKSHEET

RATING FACTOR	ASSIGNED VALUE (Circle one)	MULTI- PLIER	SCORE	MAX. SCORE	REF. Section
1.HISTORIC RELEASE	0 45	1	0	45	5.1
Date and Location: See attached supplement pages					
If line 1 is 0, the Sa = 0. Enter on line 5.					
If line 1 is 45, then proceed to line 2.					
2.WASTE CHARACTERISTICS					5.2
Reactivity and Incompatibility	0 1 2 3	1		3	
Toxicity	0 1 2 3	3		9	
Hazardous Waste Quantity	0 1 2 3 4 5 6 7 8	1		8	
Total Waste Characteristics Score				20	
ARGETS					5.3
Population within 4-mile Radius	0 9 12 15 18 21 24 27 30	1		30	
Distance to Sensitive Environment	0 1 2 3	2		6	
Land Use	0 1 2 3	1		3	
Total Target Scores				39	
4. Multiply lines 1 x 2 x 3				35100	
5. Divide line 4 by 35100 and multiply by 100 Sa = 0					

	S	S ²
GROUNDWATER ROUTE SCORE (S _{gw})	0	0
SURFACE WATER ROUTE SCORE (S _{sw})	0	0
AIR ROUTE SCORE (S _a)	0	0
$S_{gw}^2 + S_{sw}^2 + S_a^2$		0
$SQR(S_{gw}^2 + S_{sw}^2 + S_a^2)$		0
$SQR(S_{gw}^2 + S_{sw}^2 + S_a^2)/1.73 = SM$		0

DOCUMENTATION RECORDS
FOR
HAZARD RANKING SYSTEM

INSTRUCTIONS: As briefly as possible, summarize the information you used to assign the score for each factor (e.g., "Waste quantity = 4,230 drums plus 800 cubic yards of sludges"). The source of information should be provided for each entry and should be a bibliographic-type reference. Include the location of the document.

FACILITY NAME: CPP Gas Storage Building

LOCATION: New location of CPP 668

DATE SCORED: 10/18/86

PERSON SCORING: D. Joan Poland

PRIMARY SOURCE(S) OF INFORMATION:

*Site inspections, personnel
interviews and process records*

FACTORS NOT SCORED DUE TO INSUFFICIENT INFORMATION:

COMMENTS OR QUALIFICATIONS:

Radio nuclides only

GROUNDWATER ROUTE

1. OBSERVED RELEASE - Undertake Corrective Action

Contaminants detected (3 maximum):

None

Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

Depth to Aquifer of Concern

Name/description of aquifer(s) of concern:

Snake River Plain Aquifer

Depth(s) from the ground surface to the highest seasonal level of the saturated zone [water table(s)] of the aquifer of concern:

450

Depth from the ground surface to the lowest point of waste disposal/storage:

Surface

Net Precipitation

Mean annual or seasonal precipitation (list months for seasonal):

9.07 inches

Mean annual lake or seasonal evaporation (list months for seasonal):

36 inches

Net precipitation (subtract the above figures):

- 26.93 inches

Permeability of Unsaturated Zone

Soil type in unsaturated zone:

An interbedded sequence of basaltic lava flows and
sedimentary deposits.

Permeability associated with soil type:

10^{-7} to 10^{-3} cm/sec

Physical State

Physical state of substances at time of disposal (or at present time for
generated gases):

Solid

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

None

Method of highest score:

4. WASTE CHARACTERISTICS

Toxicity and Persistence

Compound(s) evaluated:

None

Compound with highest score:

None

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility, excluding those with a containment score of 0 (Give a reasonable estimate even if quantity is above maximum):

None

Basis of estimating and/or computing waste quantity:

Checklist for Groundwater Releases

<u>Identifying Release</u>	<u>Yes</u>	<u>No</u>
1. <u>Potential for Groundwater Releases from the Unit</u>		
o Unit type and design		
- Does the unit type (e.g., land-based) indicate the potential for release?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Does the unit have engineered structures (e.g., liners, leachate collection systems, proper construction materials) designed to prevent releases to groundwater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Unit operation		
- Does the unit's age (e.g., old unit) or operating status (e.g., inactive, active) indicate the potential for release?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Does the unit have poor operating procedures that increase the potential for release?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Does the unit have compliance problems that indicate the potential for a release to groundwater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Physical condition		
- Does the unit's physical condition indicate the potential for release (e.g., lack of structural integrity, deteriorating liners, etc.)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Locational characteristics		
- Is the unit located on permeable soil so the release could migrate through the unsaturated soil zone?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Is the unit located in an arid area where the soil is less saturated and therefore a release has less potential for downward migration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Does the depth from the unit to the uppermost aquifer indicate the potential for release?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Checklist for Groundwater Releases

	<u>Yes</u>	<u>No</u>
- Does the rate of groundwater flow greatly inhibit the migration of a release from the facility?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Is the facility located in an area that recharges surface water?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Waste characteristics		
- Does the waste in the unit exhibit high or moderate characteristics of mobility (e.g., tendency not to sorb soil particles or organic matter in the unsaturated zone)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Does the waste exhibit high or moderate levels of toxicity?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. <u>Evidence of Groundwater Releases</u>		
o Existing groundwater monitoring systems		
- Is there an existing system?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Is the system adequate?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Are there recent analytical data that indicate a release?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
o Other evidence of groundwater releases		
- Is there evidence of contamination around the unit (e.g., discolored soils, lack of or stressed vegetation) that indicates the potential for a release to groundwater?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Does local well water or spring water sampling data indicate a release from the unit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Determining the Relative Effect of the Release on Human Health and the Environment

1. Exposure Potential

o Conditions that indicate potential exposure		
- Are there drinking water well(s) located near the unit?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
- Does the direction of groundwater flow indicate the potential for hazardous constituents to migrate to drinking water wells?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

SURFACE WATER ROUTE

1. OBSERVED RELEASE - Undertake Corrective Action

Contaminants detected in surface water at the facility or downhill from it (3 maximum):

None

Rationale for attributing the contaminants to the facility:

2. ROUTE CHARACTERISTICS

Facility Slope and Intervening Terrain

Average slope of facility in percent:

0.04%

Name/description of nearest downslope surface water:

Big Lost River

Average slope of terrain between facility and above cited surface water body in percent:

0.07%

Is the facility located either totally or partially in surface water?

No

Is the facility completely surrounded by areas of high elevation?

No

1-year 24-Hour Rainfall in Inches

less than 2 inches

Distance to Nearest Downslope Surface Water

1,400 ft.

Physical State of Waste

Solid

3. CONTAINMENT

Containment

Method(s) of waste or leachate containment evaluated:

None

Method with highest score:

Checklist for Surface Water/Surface Drainage Releases

Yes

No

Identifying Releases

1. Potential for Surface Water/Surface Drainage Release from the Facility

o Proximity to Surface Water and/or to Off-site Receptors

- Could surface run-off from the unit reach the nearest downgradient surface water body? ✓

- Could surface run-off from the unit reach off-site receptors (e.g., if facility is located adjacent to populated areas and no barrier exists to prevent overland surface run-off migration)? ✓

o Release Migration Potential

- Does the slope of the facility and intervening terrain indicate potential for release? ✓

- Is the intervening terrain characterized by soils and vegetation that allow overland migration (e.g., clayey soils, and sparse vegetation)? ✓

- Does data on one-year 24-hour rainfall indicate the potential for area storms to cause surface water or surface drainage contamination as a result of run-off? ✓

o Unit Design and Physical Condition

- Are engineered features (e.g., run-off control systems) designed to prevent release from the unit? ✓

- Does the operational history of the unit indicate that a release has taken place (e.g., old, closed or inactive unit, not inspected regularly, improperly maintained)? ✓

- Does the physical condition of the unit indicate that releases may have occurred (e.g., cracks or stress fractures in tanks or erosion of earthen dikes of surface impoundments)? ✓

Checklist for Surface Water/Surface Drainage Releases

Yes No

o Waste Characteristics

- Is the volume of discharge high relative to the size and flow rate of the surface water body? ✓
- Do constituents in the discharge tend to sorb to sediments (e.g., metals)? ✓
- Do constituents in the discharge tend to be transported downstream? ✓
- Do waste constituents exhibit moderate or high characteristics of persistence (e.g., PCBs, dioxins, etc.)? ✓
- Do waste constituents exhibit moderate or high characteristics of toxicity (e.g., metals, chlorinated pesticides, etc.)? ✓

2. Evidence of Surface Water/Surface Drainage Releases

- o Are there unpermitted discharges from the facility to surface water that require an NPDES or a Section 404 permit? ✓
- o Is there visible evidence of uncontrolled run-off from units at the facility? ✓

Determining the Relative Effect of the Release on Human Health and the Environment

- 1. o Are there drinking water intakes nearby? ✓
- o Could human and/or environmental receptors come into contact with surface drainage from the facility? ✓
- o Are there irrigation water intakes nearby? ✓
- o Could a sensitive environment (e.g., critical habitat, wetlands) be affected by the discharge (if it is nearby)? ✓

AIR ROUTE

1. OBSERVED RELEASE

Contaminants detected:

None

Date and Location of detection of contaminants:

Methods used to detect the contaminants:

Rationale for attributing the contaminants to the site:

2. WASTE CHARACTERISTICS

Reactivity and Incompatibility

Most reactive compound:

None

Most incompatible pair of compounds:

None

Toxicity

Most toxic compound:

None

Hazardous Waste Quantity

Total quantity of hazardous waste:

None

Basis of estimating and/or computing waste quantity:

Checklist for Air Releases

	<u>Yes</u>	<u>No</u>
<u>Identifying Releases</u>		
1. Potential for Air Releases from the Facility		
o Unit Characteristics		
- Is the unit operating and does it expose waste to the atmosphere?	—	✓
- Does the size of the unit (e.g., depth and surface area) create a potential for air release?	—	✓
o Does the unit contain waste that exhibits a moderate or high potential for vapor phase release?		
- Does the unit contain hazardous constituents of concern as vapor releases?	—	✓
- Do waste constituents have a high potential for volatilization (e.g., physical form, concentrations, and constituent-specific physical and chemical parameters that contribute to volatilization)?	—	✓
o Does the unit contain waste and exhibit site conditions that suggest a moderate or high potential for particulate release?		
- Does the unit contain hazardous constituents of concern as particulate releases?	—	✓
- Do constituents of concern as particulate releases (e.g., smaller, inhalable particulates) have potential for release via wind erosion, reentrainment by moving vehicles, or operational activities?	—	✓
- Are particulate releases comprised of small particles that tend to travel off-site?	—	✓
o Do certain environmental and geographic factors affect the concentrations of airborne contaminants?		
- Do atmospheric/geographic conditions limit constituent dispersion (e.g., areas with atmospheric conditions that result in inversions)?	—	✓
- Is the facility located in a hot, dry area?	✓	—

Checklist for Air Releases

	<u>Yes</u>	<u>No</u>
2. Evidence of Air Releases		
o Does on-site monitoring data show that releases have occurred or are occurring (e.g., OSHA data)?	___	<u>✓</u>
o Have particulate emissions been observed at the site?	___	<u>✓</u>
o Have there been citizen complaints concerning odors or observed particulate emissions from the site?	___	<u>✓</u>

Determining the Relative Effect of the Release on Human Health and the Environment

1. Exposure Potential

o Is a populated area located near the site?	___	<u>✓</u>
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Checklist for Subsurface Gas Releases

	<u>Yes</u>	<u>No</u>
<u>Identifying a Release</u>		
1. Potential for Subsurface Gas Releases		
o Does the unit contain waste that generates methane or generates volatile constituents that may be carried by methane (e.g., decomposable refuse/volatile organic wastes)?	—	✓
o Is the unit an active or closed landfill or a unit closed as a landfill (e.g., surface impoundments and waste piles)?	—	✓
2. Migration of Subsurface Gas to On-site or Off-site Buildings		
o Are on-site or off-site buildings close to the unit?	✓	—
o Do natural or engineered barriers prevent gas migration from the unit to on-site or off-site buildings (e.g., low soil permeability and porosity hydrogeologic barriers/liners, slurry walls, gas control systems)?	—	✓
o Do natural site characteristics or man-made structures (e.g., underground power transmission lines, sewer pipes/sand and gravel lenses) facilitate gas migration from the unit to buildings?	—	✓
<u>Determining the Relative Effect of the Release on Human Health and the Environment</u>		
1. Exposure Potential		
o Does building usage (e.g., residential, commercial) exhibit high potential for exposure?	—	✓

FIRE AND EXPLOSION

1. CONTAINMENT

Hazardous substances present:

None

Type of containment, if applicable:

2. WASTE CHARACTERISTICS

Direct Evidence

Type of instrument and measurements:

None

Ignitability

Compound used:

None

Reactivity

Most reactive compound:

None

Incompatibility

Most incompatible pair of compounds:

None

Hazardous Waste Quantity

Total quantity of hazardous substances at the facility:

None

Basis of estimating and/or computing waste quantity:

3. TARGETS

Distance to Nearest Population

0 ft.

Distance to Nearest Building

0 ft.

Distance to Sensitive Environment

Distance to wetlands:

Greater than 100 feet

Distance to critical habitat:

Greater than 1/2 mile

Land Use

Distance to commercial/industrial area, if 1 mile or less:

The INEL is a research facility. There are no commercial/industrial facilities within 1 mile.

Distance to national or state park, forest, or wildlife reserve, if 2 miles or less:

Greater than 2 miles

Distance to residential area, if 2 miles or less:

Greater than 2 miles

Distance to agricultural land in production within past 3 years, if 1 mile or less:

Greater than 1 mile

Distance to prime agricultural land in production within past 3 years,
if 2 miles or less:

Greater than 2 miles

If a historic or landmark site (National Register or Historic Places
and National Natural Landmarks) within the view of the site?

Big Southern Butte

Population Within 2-Mile Radius

1828

Buildings Within 2-Mile Radius

189

DIRECT CONTACT

1. OBSERVED INCIDENT

Date, location, and pertinent details of incident:

None

2. ACCESSIBILITY

Describe type of barrier(s):

Buried

3. CONTAINMENT

Type of containment, if applicable:

None

4. WASTE CHARACTERISTICS

Toxicity

Compounds evaluated:

None

Compound with highest score:

5. TARGETS

Population within one-mile radius

1367

Distance to critical habitat (of endangered species)

Greater than 1 mile

Reference 6

Reference 7

TRACK-1 RISK EVALUATION SUMMARY

DATE: 1/24/92

SITE: CPP-18

SUMMARY:

A track-1 assessment was conducted to establish risk-based soil screening concentrations to evaluate potential hazardous contaminants at CPP-18. The dimensions of the contaminated region evaluated in the track-1 assessment are: 10.7 m wide and 12.2 m long, with a depth of 0.3 m. Two radioactive contaminants were evaluated: Cs-137 and Sr-90. Both radionuclides are classified by the EPA as Group A human carcinogens. The calculation of soil screening concentrations was based on a target risk level representing a cancer risk of $1.0E-06$ (based on carcinogenic effects). The evaluation followed the track-1 guidance for the assessment of low probability hazard sites at the INEL (DOE/ID-10340(91)).

Summary tables of risk-based soil screening concentrations for each evaluated radionuclide are attached. Soil screening concentrations were calculated for both industrial and residential scenarios. The residential scenario considers exposures to individuals living at the site under contaminant conditions that would exist in 100 years (after institutional control). Four potential exposure pathways were evaluated, as applicable to the radionuclides: soil ingestion, inhalation of fugitive dust, groundwater ingestion (for residential scenario only), and external exposure.

The shaded box in the attached tables shows the lowest risk-based soil concentration for each radionuclide. External exposure provided the most significant risk (lowest risk-based concentration) for Cs-137. The most significant pathway for Sr-90 was soil ingestion.

**SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR
CPP-18 SOIL CONTAMINATION FOR CS-137**

Exposure	Scenarios			
	Occupational		Residential	
Pathways	Soil Concentration at 1E-06 Risk (pCi/g)	Soil Concentration at HQ = 1 (pCi/g)	Soil Concentration at 1E-06 Risk (pCi/g)	Soil Concentration at HQ = 1 (pCi/g)
Soil Ingestion	1.32E+01	NA	1.32E+02	NA
Inhalation of Fugitive Dust	2.99E+04	NA	2.99E+05	NA
Inhalation of Volatiles	NA	NA	NA	NA
External Exposure	2.94E-03 ^a	NA	2.94E-02 ^a	NA
Groundwater Ingestion	NA	NA	>1.00E+06	NA

NA = Not Applicable.

Shaded box = Lowest risk-based soil concentration.

a. Based on the external exposure risk from Ba-137m, the decay product of Cs-137.

**SUMMARY TABLE OF RISK-BASED SOIL SCREENING CONCENTRATIONS FOR
CPP-18 SOIL CONTAMINATION FOR SR-90**

Exposure	Scenarios			
	Occupational		Residential	
Pathways	Soil Concentration at 1E-06 Risk (pCi/g)	Soil Concentration at HQ = 1 (pCi/g)	Soil Concentration at 1E-06 Risk (pCi/g)	Soil Concentration at HQ = 1 (pCi/g)
Soil Ingestion	1.12E+01	NA	1.22E+02	NA
Inhalation of Fugitive Dust	1.02E+04	NA	1.11E+05	NA
Inhalation of Volatiles	NA	NA	NA	NA
External Exposure	--	NA	--	NA
Groundwater Ingestion	NA	NA	>1.00E+06	NA

NA = Not Applicable.

-- = Calculation not performed because of no published toxicity value.

Shaded box = Lowest risk-based soil concentration.